VGLA COE Organizer
Mathematics 8

Place evidence that has been collected for submission behind the VGLA COE Organizer. Cardstock or colored paper may be used to assist in the organization of the COE.

SOL 8.1 The student will			
a)		simplify numerical expressions involving positive exponents using	
			rational numbers,
			order of operations, and
			properties of operations with real numbers; and
b)		recognize numbers expressed in scientific notation,	
		represent numbers expressed in scientific notation,	
		compare numbers expressed in scientific notation, and	
		order numbers expressed in scientific notation; and	
c)		compare	
			decimals,
			fractions,
			percents, and
			numbers written in scientific notation.
		order	
			decimals,
			fractions,
			percents, and
			numbers written in scientific notation.

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SOL 8.2 The student will			
		describe the relationship between the subsets of the real numbers system.	
			orally and
			in writing

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SOL 8.3 The student will <u>solve</u> practical problems involving		
		rational numbers,
		percents,
		ratios, and
		proportions.
	Problems will be of varying complexities and will involve real-life data, such as finding a discount and discount prices and balancing a checkbook.	

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SOL 8.4 The student will		
		apply the order of operations to evaluate algebraic expressions for given replacement values of the variables.
	Problems will be limited to positive exponents.	

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SOL 8.5 Given a whole number from 0 to 100, the student will		
		identify it as a perfect square, or
		find the two consecutive whole numbers between which the square root lies.

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SOL 8.6 The student will		
		verify by measuring and describe the relationships among
		vertical angles,
		supplementary angles,
		complementary angles, and
		measure and draw angles of less than 360°.

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SOL 8.7 The student will investigate and solve practical problems involving <u>volume</u> and <u>surface area</u> of		
		rectangular solids (prisms),
		cylinders,
		cones, and
		pyramids.

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SOL 8.8 The student will apply transformations (rotate or turn, reflect or flip, translate or slide, and dilate or scale) **to geometric figures**		
		represented on graph paper.
		the student will identify applications of transformations, such as tiling, fabric design, art, and scaling.

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SOL 8.9 The student will		
		construct a three-dimensional model, given the top, side, and/or bottom view.

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SOL 8.10 The student will		
a)	verify the Pythagorean Theorem using	
		diagrams,
		concrete materials,
		measurement; and
b)		apply the Pythagorean Theorem to find the missing length of a side of a right triangle when given the lengths of the other two sides.

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SOL 8.11 The student will analyze problem situations including		
		games of chance, board games, or grading scales, and
		make predictions, using knowledge of probability.

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SOL 8.12 The student will make <u>comparisons</u>, <u>predictions</u>, and <u>inferences</u>, using information displayed in		
		frequency distributions;
		box-and-whisker plots;
		scattergrams;
		line graphs,
		bar graphs,
		circle graphs,
		picture graphs; and
		histograms.

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SOL 8.13 The student will		
		use a matrix to organize and describe data.

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SOL 8.14 The student will		
a)	describe and represent relations and functions using	
		tables,
		graphs,
		rules; and
b)	relate and compare	
		tables,
		graphs, and
		rules as different forms of representation for relationships.

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SOL 8.15 The student will solve two-step equations and inequalities in one variable using		
		concrete materials,
		pictorial representations, and
		paper and pencil.

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SOL 8.16 The student will		
		graph a linear equation in two variables in the coordinate plane, using a table of ordered pairs.

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SOL 8.17 The student will create and solve problems using		
		proportions,
		formulas, and
		functions.

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SOL 8.18 The student will use the following algebraic terms appropriately:		
		domain,
		range,
		independent variable, and
		dependent variable.